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Trade Policy Monitoring

Iberian Peninsula Biofuels-- An Update of SP5019

2006

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Report Highlights: While the Government of Spain studies mandatory requirements for renewable fuels use, because Spain has not met the European Union voluntary renewable fuels use targets, private sector investment in new renewable fuels plants has increased considerably. This report is an attempt to identify the magnitude of the upcoming increase in production capacity.

Includes PSD Changes: No
Includes Trade Matrix: No
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INTRODUCTION

Directive 2003/30/CE set a non-binding use standard of biofuels within European Union (EU) Member States (MS) at two percent of all transport fuels by the end of 2005, and 5.75 percent during 2010 (the time frame for the analysis in this report). Biofuel production by MS was not defined, so that production could occur where it was most economically feasible under the current legislative framework. The directive also called for an accounting at the end of 2006, with the possibility of requiring a MS, where sufficient progress has not been achieved, to enact legislation to correct the lack of progress.

Despite rapid growth within the biofuels industry, many MSs (including Spain) did not meet the two percent use goal in 2005. As suggested in the previous report ([SP 5019](#)), the European Commission (EC) may choose now to alter the legislative framework in order to achieve its initial goals. In 2006, the EC released a position paper “An EU Strategy for Biofuels” where it both outlined its current goals and disclosed that another report would address this biofuels use deficit. This subsequent report (to be released shortly) will specifically address national targets within the MS, the possibility of mandatory biofuels obligations, and the sustainability standards of these biofuels.

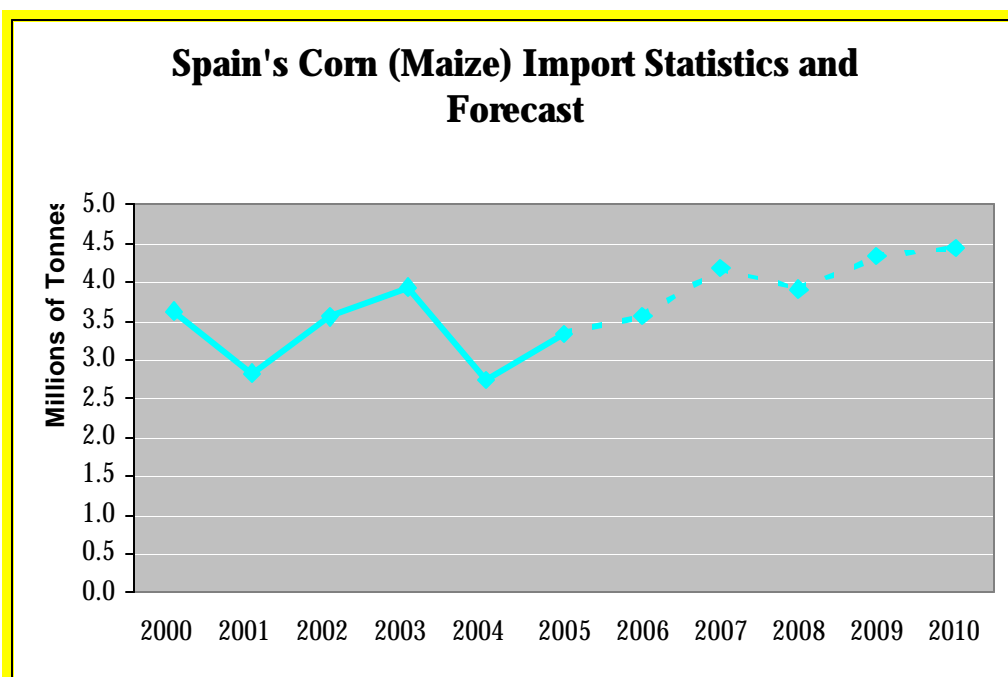
As noted in our previous report, oil prices will certainly change over coming months and years, as will world and domestic availability and prices for the primary feedstock needed for the production of biofuels. The current voluntary framework may be altered to reflect these changes and to achieve biofuel use and production goals.

The Iberian Peninsula (Spain and Portugal) is a producer of cereals and an importer of cereals and soybeans for the compound feed sector, raw material that can also be used in the production of biodiesel and ethanol. As a result, the Iberian Peninsula is and will likely continue to be a producer of biofuels, but only to the extent that such production complements domestic raw material availability and imports of raw materials with their primary application for compound feed production.

Ethanol:

Spain currently produces ethanol from local barley and wheat. U.S. cereals will not likely become an important feedstock in Iberian Peninsula ethanol production.

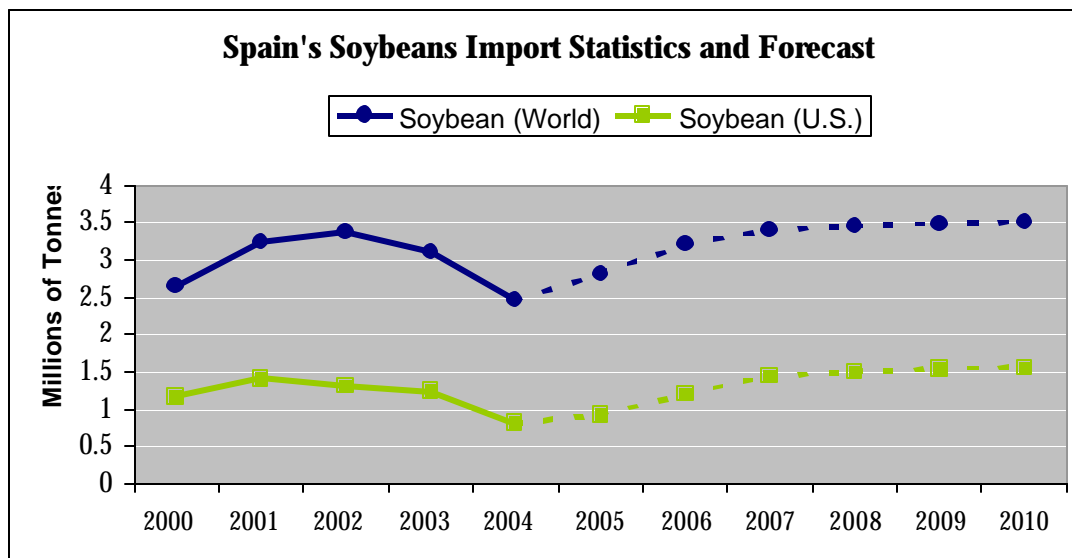
Common Agricultural Policy (CAP) reform, implemented in 2006 in Spain, partially decoupled domestic support for the production of wheat and barley and lead to a reduction in hectares of wheat and barley under production. This reform and the EC biofuels initiative ideally would have led to greater imports of U.S. corn to offset the need for animal and ethanol feedstock. However, with the defacto moratorium on biotechnology approvals, U.S. corn exporters still don't have access to the Iberian Peninsula market. U.S. wheat and sorghum will continue to enter the Iberian Peninsula market, but only towards satisfying local demand for high-quality milling wheat and, in the case of sorghum, to help meet the feed compounders' import needs to the extent that the EC provides for duty reduction.



Biodiesel:

Spain currently produces its biodiesel from recycled vegetable oils, crushing imported soybeans, and domestically produced rapeseed and sunflower seed. With this new outlet for soybean oil (biodiesel), the continued strong local demand for protein meal, and the construction of new soybean crushing plants collocated with petroleum plants, Iberian Peninsula imports of soybeans may surpass the levels seen in 2002.

The ability to use soybean oil, crushed from imported soybeans, in the production of biodiesel is important for local crushers. Local soybean crushers have recently been scrambling to find new markets for soy oil, because new EC traceability and labeling regulations require that all oil derived from biotechnology soybeans be labeled as being produced from “genetically modified soybeans.” For the most part, local food processors and food retailers are unwilling to buy or use biotechnology-derived products that would require labeling, so the opportunity to use soy oil in biodiesel production is potentially good news. Furthermore, in this protein-deficit feed market, soybean meal is in demand, and to the extent that imported soybeans can be economically imported, crushed and the derived products sold into the domestic market, soy oil will be a potentially viable ingredient in biodiesel.



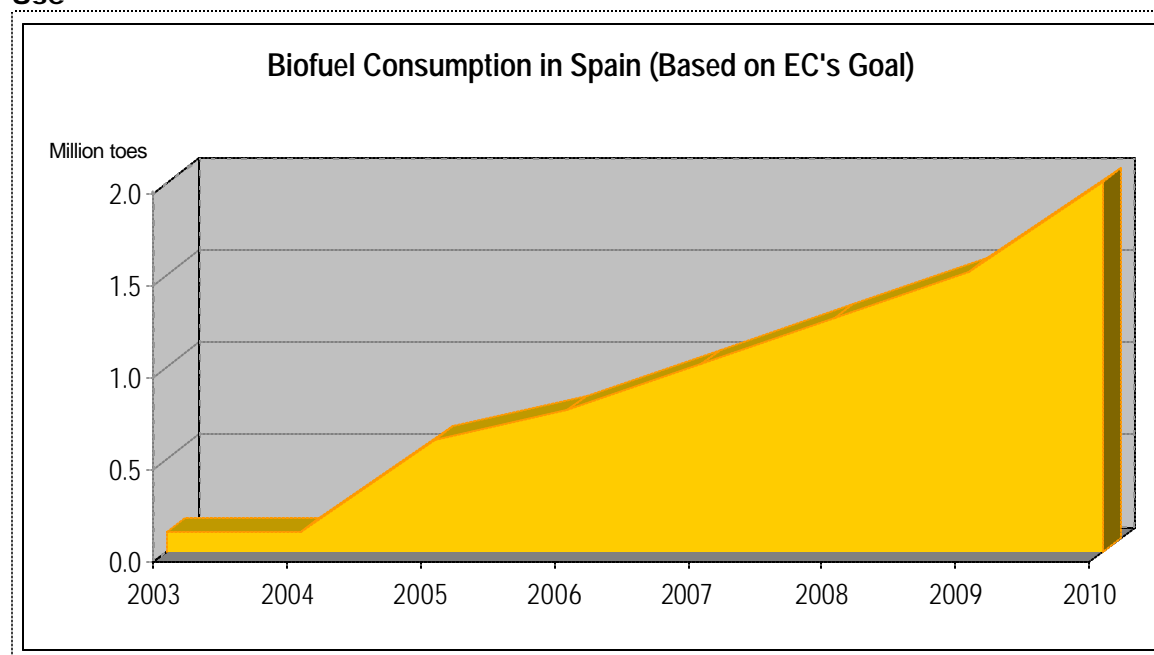
Current State of Play

Legislative:

Under Directive 2003/30/CE, Promotion and Use of Biofuels, each MS should attempt to meet the EC's objectives, which lay out goals for biofuel use as previously noted. The Directive also requires that each MS enact all legal and administrative regulations necessary to comply with its objectives, and submit annual reports describing their biofuels programs. At the end of 2006 and every two subsequent years, the EU will release a review of the progress of biofuel integration. This report will reportedly assist in determining if any additional legislation is needed to promote the use of biofuels.

In Spain, the "Ley de Acompañamiento de los Presupuestos del Estado," issued on December 31, 2002, establishes that all biofuels introduced into fuels be exempted from the hydrocarbon tax. Spain's renewable fuels decree (1700/2003) also sets the technical standards for biofuels, including a deviation from the EC directive in Article 7, Paragraph 3 regarding maximum iodine content (140 vs. 120 in the EU directive), which, as a result facilitates the use of soy oil in the production of biodiesel in Spain.

Use



In 2005, the use of biofuel in Spain was about 200 thousand metric tones of oil equivalent (TMTOE), or .44 percent of the total use of petroleum. To meet its goals, the EU Directive targets would have meant 600 TMTOE use during 2005.

To reach 2010 goals (2,000 TMTOE), Spain needs to increase its use by about sixteen times current levels. The Spanish Producers of Renewable Energy Association (APPA) proposed additional incentives and requirements (please see SP6033) to achieve these use goals, including mandatory blending of biofuels and petroleum and assurances from manufacturers and importers as to the suitability of biofuel usage. Other EU-Member States (Italy, France, Netherlands, and Austria) have made biofuel blending mandatory.

Ethanol Production:

Abengoa Bioenergia, S.A. leads the ethanol market in Europe and Spain with three plants in operation, Ecocarburantes Españoles, Bioetanol Galicia, and Biocarburantes Castilla y Leon (50 percent joint venture with Ebro Puleva). These plants have combined production capacities of 415 thousand metric tones (TMT) annually.

Bioethanol Production Plants in Spain

Plant Name	Province	Capacity (tmt)	Raw Materials	Start Date
Ecocarburantes Espanoles	Murcia	118	Wheat / Barley & Potable Alcohol	2000
Bioetanol Galicia	A Coruna	139	Wheat / Barley & Potable Alcohol	2002
Biocarburantes Castilla y Leon	Salamanca	158	Wheat / Barley / Corn & Feedstock	2006

Source: Appa.es, BiodieselSpain.com, and FAS Iberia estimates

Abengoa's recent investment in an ethanol plant in the corn-growing region of Lacq, France, rather than the barley/wheat growing regions of Spain may signal a change in their investment philosophy, but further development of ethanol production capacity in Spain by other players remains strong. Several joint ventures have announced their intentions to develop ethanol production plants (please see below). Due to the recent EU sugar reform, Ebro Puleva will modify its current sugar refinery in Burgos towards the production of ethanol.

Planned Bioethanol Production Plants in Spain

Plant Name	Province	Capacity (tmt)	Raw Materials	Start Date
Bioetanol de la Mancha	Ciudad Real	26	Potable Alcohol	2007
Ecobarcial	Zamora	145	Wheat / Barley/ Corn	2008
Sniace Biofuels	Cantabria	100	Wheat / Barley / Corn	2008
DosBio (Ebro Puleva) Miranda	Burgos	80	Sugar Beet	2009

Source: BiodieselSpain.com, Madrimasd.org, and FAS Iberia estimates. **Note:** Conversion of some data at 1 metric ton of ethanol = 1262 liters

For 2005, the Spanish Ministry of Industry, Tourism, and Trade estimates that ethanol use within Spain was 175 TMT compared to its actual production of about 240 TMT—the rest being exported. Domestic use of ethanol, after it is refined into a fuel additive and then blended with gasoline, has only risen slightly from its 2003 levels (152 TMT) and 2004 levels (169 TMT).

For the production of ethanol in Spain, wheat, barley, wine, and waste from winery processing are used as the primary raw materials. While wheat has been the primary raw material for Abengoa, it recently announced that its Salamanca plant will switch from wheat to barley as its primary raw material beginning with the first quarter of 2007. It is not known whether this switch, attributed to high wheat prices, is permanent or temporary. As Abengoa begins using domestic wheat, this switch will invariably affect local wheat and barley prices.

Currently, the abovementioned plants use just over 1.1 million tons of grains (wheat and barley), and produce about 390 thousand tons of distiller's grains. Corn is not used in the production of ethanol in Spain, nor is there any stated plan to begin using it in the near future. Barley and wheat are far more extensively grown in Spain, and thus more accessible for the production plants. As noted earlier, domestically produced sugar beets may become another source of raw materials for ethanol production.

Biodiesel Production:

Spanish biodiesel production is relatively new. The first plant was commissioned in 2002, with a production capacity of 6 TMT per year. Development of new biodiesel plants continues at a strong pace, including the recently inaugurated Combustibles Ecologicos plant in Cuenca with a capacity of 72 TMT per year. By the close of 2006, 11 biodiesel plants were in production. The European Biodiesel Board estimates total production capacity in 2006 at 224 TMT per year.

Biodiesel Production Plants in Spain

Plant Name	Province	Capacity (tmt)	Raw Materials	Start Date
Biocarburos Almaden	Ciudad Real	24	Soy, Rapeseed, Sunflower Seed, Palm	2006
Biodiesel Andalucía 2004	Sevilla	36	Vegetable Oil & Recycled Oil	2005?
Biodiesel Caparrosa	Navarra	35	Soy, Rapeseed, Palm	2005
Biodiesel CLM, S.L.	Toledo	10	Used Vegetable Oils	2005
Bionet Europa	Tarragona	50	Used Vegetable Oils	2003
Bionor Transformacion	Alava	30	Vegetable Oil & Recycled Oil	2003
Bionorte, S.A.	Asturia	5	Used Vegetable Oil & Soy	2005
Combustibles Ecologicos Biotel	Cuenca	72	Soy	2006
Grupo Ecologico Natural SL	Baleares	25	Used Vegetable Oil	2006
Stocks de Valles	Barcelona	28	Used Vegetable Oils	2002
UCM / IDEA	Madrid	5	Vegetable Oils	2004

Source: Appa.es, BiodieselSpain.com, IDEA.es, and FAS Iberia estimates

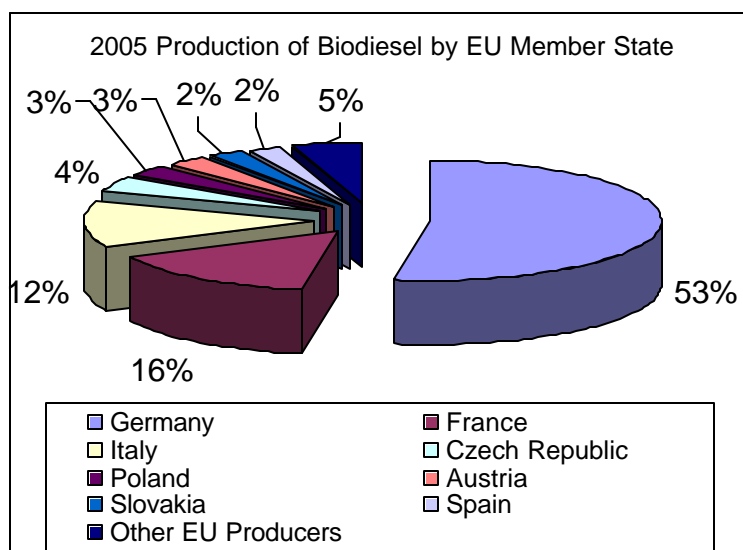
Furthermore, plans exist to build many new biodiesel plants within the next three years, including eighteen with capacities of at least 100 TMT per year. Almost all of these new plants will use virgin oils (mostly soybeans, and rapeseed) rather than previously used oils.

Planned Biodiesel Production Plants (100+) in Spain

Company / Plant Location	Province	Capacity (tmt)	Raw Materials	Start Date
Acciona/Repsol: A Coruña	Coruña	200	Vegetable Oils	2007-2009
Acciona/Repsol: Cartagena	Murcia	200	Vegetable Oils	2007-2009
Acciona/Repsol: Petronor	Vizcaya	200	Vegetable Oils	2007-2009
Acciona/Repsol: Puertollano	Ciudad Real	200	Vegetable Oils	2007-2009
Acciona/Repsol: Tarragona	Tarragona	200	Vegetable Oils	2007-2009
Acciona/Repsol: Biodiesel Esla Campos	Leon	100	Vegetable Oils	2009
Disa: Tenerife	Tenerife	150	Rapeseed, Oil, Plants, Recycled Oil	2009
Ebra Puleva / Dos Bio	Cadiz	200	Vegetable Oils	2008
CIE Automotive / Bionor: Bilbao	Vizcaya	120	Vegetable Oils	2008-2009
CIE Automotive / Bionor: Alava	Alava	100	Vegetable Oils	2008-2009
CIE Automotive / Bionor: Huelva I	Huelva	150	Vegetable Oils	2008
CIE Automotive / Bionor: Huelva II	Huelva	150	Vegetable Oils	2009
Entaban & Eolia: Ferrol	Ferrol	200	Vegetable Oils	2008
Entaban & Eolia: Bilbao	Vizcaya	200	Vegetable Oils	2008
Cepsa and Bio Oils Energy: Huelva	Huelva	200	Vegetable Oils	2007
Cepsa and Abengoa: Cadiz	Vizcaya	200	Vegetable Oils	2008
Sos Cuetara: Jaen	Jaen	200	Vegetable Oils	2008
Linares Biodiesel Technologies: Jaen	Jaen	200	Vegetable Oils	2007-2008

Source: BiodieselSpain.com, Reuters: Factbox, and FAS Iberia estimates.

Even though biodiesel production in Spain is increasing, it only makes up a small percentage of all European production. Germany, France, and Italy are the leaders, with Germany's production making up more than half of all EU production.



For 2005, the Spanish Ministry of Industry, Tourism, and Trade estimates that biodiesel use within Spain was 27 TMT compared to its actual production of about 73 TMT—the rest being exported. Like ethanol, domestic use of biodiesel has only risen slightly from its 2003 levels (6 TMT) and 2004 levels (9 TMT). Current domestic use only accounts for about .10 percent of the total biodiesel market of 23,253 TMT.

Biodiesel accessibility is still very limited in Spain. Estimates suggest that between 350-380 of Spain's 7500 service stations in sell biodiesel. However, the recent surge in joint ventures between biofuel plants and traditional refineries suggest that biodiesel blends will increase substantially in the next five years. For example, Acciona plans to build six plants near Repsol's Spanish refineries for eventual blending of the finished biodiesel product. Under current Spanish law, the manufacturer does not have to indicate the biodiesel blend if it is under 5 percent.

Raw materials used for production vary depending on the plant size and location. Those with a smaller capacity exclusively recycle second-hand oil collected from restaurants, catering companies, schools, etc. The larger plants use newly refined from collocated crushing facilities, and used vegetable oil. Spanish biodiesel producers use mainly rapeseed oil, and to some extent sunflower seed oil. Palm oil and soybean oil use is limited but increasing as a result of competitive prices, labeling and traceability, and the previously mentioned Spanish decree permitting higher iodine content in the biofuel.

Possible Changes

In the coming years, several factors will likely propel further biofuels use within Spain. First, Spain's carbon dioxide emission levels continue to rise with estimates placing them at 50 percent more than its 1990 levels (the Kyoto baseline). This large rise directly conflicts with the EU's Kyoto protocol's obligations (no more than 15 percent 1990 levels). Similarly, Spain's current low biofuels use rate (.44 percent) pales in comparison to EU suggested levels. In the future, the EU will likely require MS to increase their biofuels use, and reduce

their emission levels, or face infringement proceedings. The Spanish Energy Minister has publicly stated that Spain will likely make compulsory the biofuels blend (2 percent) within 2007 (please see SP6033).